Código para el parseo de la función transferencia:

```
public static void main(String[] args) {

          String trans = ""; //aqui va la funcion de
transferencia de 6500 caracteres

          String[] num_den = trans.split("/");

          String num = num_den[0];
          String den = num_den[1];

          String pat = "(s(\\^\\d)?)";

          impimir_pols(num, pat, "Numerador");
          System.out.println("\n\n\n");
          impimir_pols(den, pat, "Denominador");
     }

     public static int max(int int1, int int2){
          return ((int1>int2) ? int1: int2);
     }

     public static void impimir_pols(String exp, String pat,
String nom_exp){

          String[] subs = exp.split(pat);

          Pattern p = Pattern.compile(pat);
          Matcher m = p.matcher(exp);
          LinkedList<String> pols = new LinkedList<String>();

          while(m.find())
               pols.add(m.group(0));

          System.out.println(nom_exp + ":");

          for(String s: subs){
               if(!pols.isEmpty())
                    System.out.println(pols.removeFirst()+":\t "
+ s  );
               else
                    System.out.println("ind:\t " + s );
          }
     }
```

La función transferencia podrá ser descompuesta entonces en:

num_s_2 = a0^2*wp^2*(r6 + r7)*(2*r5 + r6 + r7)*(r1*v2 - r2*v1 + r2*v2)

num_s_1 = a0^3*v2*wp^3*(r1*r6^2 + r2*r6^2 + 2*r1*r5*r6 + r1*r5*r7 + 2*r2*r5*r6 + r1*r6*r7 + 2*r2*r5*r7 + r2*r6*r7) - a0^3*v1*wp^3*(r2*r6^2 + r1*r5*r7 + 2*r2*r5*r6 + 2*r2*r5*r7 + r2*r6*r7) + 2*a0^2*v2*wp^3*(r1 + r2)*(r6 + r7)*(2*r5 + r6 + r7) - 2*a0^2*r2*v1*wp^3*(r6 + r7)*(2*r5 + r6 + r7)

num_ind = a0^3*v2*wp^4*(r1*r6^2 + r2*r6^2 + 2*r1*r5*r6 + r1*r5*r7 + 2*r2*r5*r6 + r1*r6*r7 + 2*r2*r5*r7 + r2*r6*r7) - a0^3*v1*wp^4*(r2*r6^2 + r1*r5*r7 + 2*r2*r5*r6 + 2*r2*r5*r7 + r2*r6*r7) + a0^2*v2*wp^4*(r1 + r2)*(r6 + r7)*(2*r5 + r6 + r7) - a0^2*r2*v1*wp^4*(r6 + r7)*(2*r5 + r6 + r7) - a0^4*r2*r7*v1*wp^4*(r6 + r7) + a0^4*r2*r7*v2*wp^4*(r6 + r7)

den_s_4 = (r1 + r2)*(r6 + r7)*(2*r5 + r6 + r7)

den_s_3 = a0*wp*(3*r1*r6^2 + r1*r7^2 + 2*r2*r6^2 + 6*r1*r5*r6 + 4*r1*r5*r7 + 4*r2*r5*r6 + 4*r1*r6*r7 + 2*r2*r5*r7 + 2*r2*r6*r7) + 4*wp*(r1 + r2)*(r6 + r7)*(2*r5 + r6 + r7)

den_s_2 = (3*r1*r6^2 + r1*r7^2 + r2*r6^2 + r2*r7^2 + 6*r1*r5*r6 + 2*r1*r5*r7 + 2*r2*r5*r6 + 3*r1*r6*r7 + r2*r6*r7)*a0^2*wp^2 + (9*r1*r6^2 + 3*r1*r7^2 + 6*r2*r6^2 + 18*r1*r5*r6 + 12*r1*r5*r7 + 12*r2*r5*r6 + 12*r1*r6*r7 + 6*r2*r5*r7 + 6*r2*r6*r7)*a0*wp^2 + 6*(r1 + r2)*(r6 + r7)*(2*r5 + r6 + r7)*wp^2

den_s_1 = (r1*r6^2 + r1*r7^2 + 2*r1*r5*r6 + 2*r1*r6*r7 + r2*r6*r7)*a0^3*wp^3 + (6*r1*r6^2 + 2*r1*r7^2 + 2*r2*r6^2 + 2*r2*r7^2 + 12*r1*r5*r6 + 4*r1*r5*r7 + 4*r2*r5*r6 + 6*r1*r6*r7 + 2*r2*r6*r7)*a0^2*wp^3 + (9*r1*r6^2 + 3*r1*r7^2 + 6*r2*r6^2 + 18*r1*r5*r6 + 12*r1*r5*r7 + 12*r2*r5*r6 + 12*r1*r6*r7 + 6*r2*r5*r7 + 6*r2*r6*r7)*a0*wp^3 + 4*(r1 + r2)*(r6 + r7)*(2*r5 + r6 + r7)*wp^3

den_ind = wp^4*(r1 + r2 + a0*r1)*(r6 + r7 + a0*r6)*(2*r5 + r6 + r7 + 2*a0*r5 + a0*r6 + a0^2*r7)

Luego, si se toma r1 = 0, la función transferencia final queda reducida a:

num_s_2 = a0^2*wp^2*(-v1 + v2)

num_s_1 = a0^2*wp^3*(v2-v1) *{ 2+ a0* (1- r7/(2*r5 + r6 + r7)) }

num_ind = a0^2*wp^4*(v2-v1)*{a0^2*r7/(2*r5+r6+r7) + a0*(1 – r7/(2*r5+r6+r7)) +1}

den_s_4 = 1

den_s_3 = 2* wp * {a0 *(1 – (r7(r5+r7)+r6*r5)/((r6+r7) (2*r5+r6+r7)))+2 }

den_s_2 = 6*wp^2*{1 + a0 *(1 – (r7(r5+r7)+r6r5)/ ((r6+r7) (2*r5+r6+r7)) }

den_s_1 = wp^3*{r6*r7*a0^3 + (1 - (r7(r5+r7)+r6r5)/ ((r6+r7) (2*r5+r6+r7)))*a0 + a0^2 (2*r6^2 + 2*r6*r7 +4*r5*r6 +2*r7^2)/((r6+r7) (2*r5+r6+r7))+4}

den_ind = wp^4 * {a0*(1 – 2*(r5+r6+r7)/((r6+r7) (2*r5+r6+r7)) + a0^2 * ((2)/(r7*(r6+2r5))/((r6+r7) (2*r5+r6+r7))) + a0^3 * r6*r7/((r6+r7) (2*r5+r6+r7)) +2}